In the claims:

The claims are as follows.

1. (Previously Presented) A method for determining information about a carrier frequency of a signal transmitted by a possibly moving transmitter, the signal having a code component and a carrier component at the carrier frequency, the method comprising:

a) responding to successive approximately carrier-demodulated received signal fragments of the signal, and providing a set of correlation results indicating information about a correlation of the successive approximately carrier-demodulated received signal fragments with phase-shifted replicas of the code component, wherein the successive approximately carrier-demodulated received signal fragments are formed using different possible offsets from a nominal carrier frequency, and further wherein each element of the set is provided as a phasor having a magnitude and a phase; and

b) responding to the set of phasors, selecting the phasor having a magnitude distinguishing it from all the other elements of the set, and determining the phase of the selected phasor;

wherein providing the set of correlation results includes performing a coherent integration of the successive approximately carrier-demodulated received signal fragments, and performing a non-coherent integration in which phasor results of the coherent integrations are combined without regard to phase; and

further wherein performing the non-coherent integration involves multiplying each element of a matrix

of correlation results provided using a coherent integration of a first signal fragment, by the complex conjugate of a corresponding element for an immediately preceding signal fragment.

2. (Previously Presented) A method as in claim 1, wherein the set of correlation results is a matrix of correlation results, and further wherein the matrix of correlation results is spanned by an index indicating an offset from a nominal carrier frequency and also by an index indicating a replica code phase, and still further wherein the selected phasor is the phasor having the maximum magnitude of all the elements of the set.

3. Canceled.

4. Canceled.

5. (Previously Presented) A method as in claim 2, wherein in providing the matrix of correlation results as phasor values and in determining the phase of the phasor having the maximum magnitude of all the elements of the matrix, only at most two phasor values are held in a memory device at any instant of time, and of the two phasor values, only the phasor value having the larger magnitude is saved in the memory device before calculating a next phasor value.

6. (Previously Presented) An apparatus for determining information about a carrier frequency of a signal transmitted by a possibly moving transmitter, the signal having a code component and a carrier component at the carrier frequency, the apparatus comprising:

a) means, responsive to successive approximately carrier-demodulated received signal fragments of the signal, for providing a set of correlation results indicating information about a correlation of the successive approximately carrier-demodulated received signal fragments with phase-shifted replicas of the code component, wherein the successive approximately carrier-demodulated received signal fragments are formed using different possible offsets from a nominal carrier frequency, and further wherein each element of the set is provided as a phasor having a phase and a magnitude; and

b) means, responsive to the set of phasors, for selecting the phasor having a magnitude distinguishing it from all the other elements of the set, and determining the phase of the selected phasor, and for providing information about the carrier frequency based on the phase of the selected phasor;

wherein the means for providing the set of correlation results includes means for performing a coherent integration of the successive approximately carrier-demodulated received signal fragments, and also means, responsive to the coherent integrations, for providing a non-coherent integration in which phasor results of the coherent integrations are combined without regard to phase; and

further wherein the means for performing the non-coherent integration multiplies each element of a matrix of correlation results provided using a coherent integration of a first received signal fragment, by the complex conjugate of a corresponding element for an immediately preceding received signal fragment.

7. (Previously Presented) An apparatus as in claim 6, wherein the set of correlation results is a matrix of correlation results, and further wherein the matrix of correlation results is spanned by an index indicating an offset from a nominal carrier frequency and also by an index indicating a replica code phase, and still further wherein the selected phasor~~,~~ is the phasor having the maximum magnitude of all the elements of the set.

8. Canceled.

9. Canceled.

10. (Previously Presented) An apparatus as in claim 7, wherein in providing the matrix of correlation results as phasor values and in determining the phase of the phasor having the maximum magnitude of all the elements of the matrix, only at most two phasor values are held in a memory device at any instant of time, and of the two phasor values, only the phasor value having the larger magnitude is saved in the memory device before calculating a next phasor value.

11. (Previously Presented) A system, including: a transmitter for transmitting a signal having a code component and a carrier component, and a ranging receiver for receiving the signal and for determining information about the carrier frequency of the signal, the ranging receiver characterized in that it comprises:

a) means, responsive to successive approximately carrier-demodulated received signal fragments of the signal, for providing a set of correlation results

indicating information about a correlation of the successive approximately carrier-demodulated received signal fragments with phase shifted replicas of the code component, wherein the successive approximately carrier-demodulated received signal fragments are formed using different possible offsets from a nominal carrier frequency, and further wherein each element of the set is provided as a phasor having a phase and a magnitude; and

b) means, responsive to the matrix of phasors, for selecting the phasor having a magnitude distinguishing it from all the other elements of the set, and determining the phase of the selected phasor, and for providing information about the carrier frequency based on the phase of the selected phasor;

wherein the means for providing the set of correlation results includes means for performing a coherent integration of the successive approximately carrier-demodulated received signal fragments, and also means, responsive to the coherent integrations, for providing a non-coherent integration in which phasor results of the coherent integrations are combined without regard to phase; and

further wherein the means for performing the non-coherent integration multiplies each element of a matrix of correlation results provided using a coherent integration of a first received signal fragment, by the complex conjugate of a corresponding element for an immediately preceding received signal fragment.

12. (Previously Presented) The system as in claim 11, further comprising a computing resource external to the ranging receiver, and wherein an apparatus communicates

information to the computing resource via a wireless communication system and the computing resource provides at least some of the computation needed either to provide the set of correlation results or to determine the selected phasor.

13. (New) An apparatus for determining information about a carrier frequency of a signal transmitted by a possibly moving transmitter, the signal having a code component and a carrier component at the carrier frequency, the apparatus comprising:

a) a first module responsive to successive approximately carrier-demodulated received signal fragments of the signal, for providing a set of correlation results indicating information about a correlation of the successive approximately carrier-demodulated received signal fragments with phase-shifted replicas of the code component, wherein the successive approximately carrier-demodulated received signal fragments are formed using different possible offsets from a nominal carrier frequency, and further wherein each element of the set is provided as a phasor having a phase and a magnitude; and

b) a second module responsive to the set of phasors, for selecting the phasor having a magnitude distinguishing it from all the other elements of the set, and determining the phase of the selected phasor, and for providing information about the carrier frequency based on the phase of the selected phasor;

wherein the first module includes a first submodule for performing a coherent integration of the successive approximately carrier-demodulated received signal fragments, and also a second submodule, responsive to the

coherent integrations, for providing a non-coherent integration in which phasor results of the coherent integrations are combined without regard to phase; and

further wherein the second sub-module for performing the non-coherent integration multiplies each element of a matrix of correlation results provided using a coherent integration of a first received signal fragment, by the complex conjugate of a corresponding element for an immediately preceding received signal fragment.

14. (New) An apparatus as in claim 13, wherein the set of correlation results is a matrix of correlation results, and further wherein the matrix of correlation results is spanned by an index indicating an offset from a nominal carrier frequency and also by an index indicating a replica code phase, and still further wherein the selected phasor is the phasor having the maximum magnitude of all the elements of the set.